

REMARKS/ARGUMENTS

This application has been carefully reviewed in light of the Non-Final Office Action dated May 4, 2006. By way of this amendment, claims 1-19 have been cancelled. Claims 20-39 are new and currently pending in the application. Further review is requested in light of the following remarks.

Claim 6 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Particularly, claim 6 is dependent on itself.

Claims 1, 4, 5, 6 have been rejected under 35 U.S.C. §102(b) as being anticipated by Patent No. 3,118,607 (Rocher). Claims 1, 3, 7, 8, 9, 10, 11, 13, 14, 16, 17, 18 have been rejected under 35 U.S.C. §102(e) as being anticipated by Patent No. 6,719,065 (Baughman). Claims 1, 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18, 19 have been rejected under 35 U.S.C. §102(b) as being anticipated by Patent No. 5,465,456 (Fellhauer et al.). Claims 1-17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Patent No. 6,070,808 (Kildow) in view of Fellhauer et al.

Claims 1-19 have been cancelled, thus, the rejections are now moot with respect to those claims.

Anticipation

The Examiner has cited the Rocher, Baughman, and Fellhauer et al. references in the above 35 U.S.C. §102 rejections. None of the cited references anticipate new claims

20-39 submitted herewith.

Claim 20 recites a lawn and garden sprayer having a push handle attached to the chassis for allowing a user to manually push the sprayer through thick turf, a battery carried on a chassis for supplying power to a pump, a spray head positioned on a front end of the chassis and oriented to produce an evenly-dispersed forward projecting discharge of the liquid under pressure, and a spray wand carried by the lawn and garden sprayer for discharging liquid at a location remote from the chassis.

Rocher does not anticipate claim 20. The spraying machine of Rocher does not include a battery for supplying power to a pump. Instead, a motor is used to run the pump. As can be seen in Figure 1, the motor has a pulley system that runs a drive shaft connected to the pump. The use of a motor increase the weight of the spraying machine, thereby making it harder to maneuver over surfaces such as turf. Rocher does not disclose a spray head positioned on a front end of the chassis for producing a forward projecting discharge of a liquid. Rocher discloses a hood positioned on a front end of the chassis and a spray head positioned inside of the hood for directing a spray of liquid downwardly. Further, Rocher does not disclose a spray wand for discharging liquid at a location remote of the chassis. Accordingly, Rocher does not anticipate claim 20.

Baughman does not anticipate claim 20. Baughman discloses a fire fighting apparatus. The fire fighting apparatus does not have a push handle attached to the chassis (frame 12) for allowing a user to manually push the sprayer through thick turf. The

fire fighting apparatus is not designed to be used for lawn and garden purposes. As discussed in Column 4, lines 23-25, the apparatus has a container (container 20) designed to hold 100 to 500 gallons of water and another 3-50 gallons of foam. Column 4 lines 12-27. This would result in an apparatus that is entirely too heavy for use on turf. Also, it would be too heavy to push, and would instead need to be pulled by a machine. Figure 1 clearly shows this to be the case by showing a hitch system to allow the apparatus to be hooked up to a vehicle so that it can be pulled. This is also discussed in Column 4, lines 3-5. Thus, not only does the apparatus not have a push handle attached to the chassis, but even if it did, the apparatus would be too heavy for a user to manually push the sprayer through thick turf.

Additionally, Baughman does not disclose a spray head positioned on a front of the chassis, or a battery for supplying power to a pump. The pump is driven by a gasoline or diesel engine, again increasing the weight of the apparatus. This is discussed in Column 4, lines 46-47. Also, Baughman does not disclose a spray wand. Rather, Baughman discloses a fire hose that can be attached to a spray bar. Accordingly, Baughman does not anticipate claim 20.

Fellhauer et al. does not anticipate claim 20. Fellhauer et al. discloses a floor cleaning apparatus. The cleaning apparatus does not include a spray head positioned on a front end of the chassis for producing a forward projecting discharge of a liquid. Fellhauer et al. discloses a spray nozzle positioned under the chassis. The spray nozzle

of Fellhauer et al. sprays downwardly onto a floor surface to allow a brush to scrub the floor after it has been sprayed. The spray nozzle does not produce a forward projecting discharge as recited in claim 20. Additionally, the wheels connected to the bottom of the chassis are not adapted to allow the cleaning apparatus to be pushed through a thick turf. The cleaning apparatus has small castors on the rear of the chassis to allow the cleaning apparatus to be turned easily on a hard surface; however, small castors on positioned on a rear of the chassis would not allow the cleaning surface to be maneuvered easily on a thick turf.

Claims 21-29 depend from independent claim 20, and are thus believed to be allowable for the reasons stated below.

Additionally, claim 22 recites that the rear wheels have a larger diameter than the front wheels for allowing easy movement of the sprayer through thick turf. Rocher, Baughman, and Fellhauer et al. do not disclose a sprayer with rear wheels having a larger diameter than the front wheels to allow easy movement through thick turf.

Claim 24 recites that the spray head comprises at least one nozzle mounted to the chassis for producing an evenly-dispersed forward projecting discharge of the liquid under pressure. Rocher, Baughman, and Fellhauer et al. do not disclose a spray head mounted to a front end of the chassis. Rocher is the only one that even discloses a spray head positioned on a front end of the sprayer; however, the spray head in Rocher is not positioned on a front end of or mounted to the chassis. Rather, the spray head is

positioned in a hood that is positioned on a front end of the chassis.

Claims 25-29 discuss the connection of the spray head and spray wand to the pump. This includes the use of a tee connected to a discharge port of the pump and a splitter having first and second valves. None of the cited prior art patents disclose these elements.

Claim 30 recites a lawn and garden sprayer having a chassis with an interior cavity mounted on a plurality of wheels and having a push handle attached to the chassis for allowing a user to manually push the sprayer through thick turf; a container carried within the interior cavity for containing a liquid for being sprayed; a battery carried within the interior cavity for supplying power to a pump connected to the container for discharging the liquid from the container under pressure; a spray head positioned on a front end of the chassis and operably connected to the pump, the spray head being oriented to produce a forward projecting discharge of the liquid under pressure; and a spray wand carried by the lawn and garden sprayer and removable therefrom, the spray wand being operably connected to the pump for discharging the liquid under pressure at a location remote from the chassis.

Rocher does not anticipate claim 30. Rocher does not disclose a spraying machine having a chassis with an interior cavity for carrying a container and a battery therein. Also, as discussed above, Rocher does not disclose a spray head positioned on a front end of the chassis, a battery for supplying power to a pump, or a spray wand for discharging a

liquid.

Baughman does not anticipate claim 30. Baughman does not disclose a chassis with an interior for carrying a container and a battery therein. Baughman discloses a container positioned on a frame for carrying liquids. Also, as discussed above, Baughman does not disclose a spray head positioned on a front of the chassis, a battery for supplying power to the pump, or a spray wand.

Fellhauer et al. does not anticipate claim 30. As discussed above, Fellhauer et al. does not include a spray head positioned on a front of the chassis for producing an evenly-dispersed forward projecting discharge of liquid under pressure or wheels adapted to allow the cleaning apparatus to be pushed through a thick turf.

Claims 31-39 depend from independent claim 30, and are thus believed to be allowable for the reasons stated below.

Additionally, claims 31 and 32 recite that the interior cavity is defined by sides that form a continuous rim on a top edge of the chassis, and that the top edge defines a female strengthening ring for adding strength to the chassis, and the container has a male strengthening ring for adding strength and mating with the female strengthening ring of the chassis. As discussed, Rocher and Baughman do not disclose a chassis having an interior cavity, nor do they disclose a container having a male strengthening ring for mating engagement with a female strengthening ring. Fellhauer et al. discloses two housings, but does not disclose the use of a female strengthening ring or a male strengthening ring to

provide added strength and to allow mating engagement.

Claim 36 recites that the spray head comprises at least one nozzle mounted to the chassis for producing an evenly-dispersed forward projecting discharge of a liquid under pressure. As discussed above with claim 24, Rocher, Baughman, and Fellhauer et al. do not disclose a spray head mounted to a front end of the chassis.

Claims 38 and 39 recite that the sprayer further includes a back cover adjacent to the container and attached to the chassis for covering the power supply and the pump within the interior cavity of the chassis, and that the back cover has a male strengthening ring for mating with the female strengthening ring of the chassis. None of the cited prior art references disclose the use of a separate cover attached to the chassis for covering the power supply and pump. Additionally, none of the prior art cited discloses a back cover with a male strengthening ring for mating with a female strengthening ring of the chassis.

As discussed above, Rocher and Baughman do not disclose a chassis having an interior cavity. Fellhauer et al. discloses a second housing having a reservoir (i.e. container) positioned on top of a first housing, but does not disclose a cover adjacent to a container for covering the pump and battery.

Obviousness

The Examiner has cited Kildow in view of Fellhauer et al. in the above 35 U.S.C. §103 rejections. Claims 20 and 30 are not rendered unpatentable by Kildow in view of Fellhauer et al. Neither Kildow or Fellhauer et al. discloses a spray head positioned on a

front end of the chassis for producing an evenly-dispersed forward projecting discharge of the liquid under pressure. Kildow does not disclose a spray nozzle positioned on a front end of the chassis, and only discloses the use of a spray wand. Fellhauer et al. discloses a spray nozzle below the chassis for directing a spray downwardly and toward the back of the cleaning machine for spraying a floor area directly in front of a scrubbing brush. This direct spraying is advantageous for floor cleaning since it would be preferred to spray the chemicals being used directly onto the area being cleaned, as opposed to spraying a wide area. Thus, Fellhauer et al. does not cure the defect of Kildow. Since neither of the cited prior art patents disclose the invention in its entirety, as claimed in claims 20 and 30, the combination of Kildow and Fellhauer et al. would not render claims 20 and 30 obvious and unpatentable.

Claims 21-29 depend from independent claim 20, and are thus believed to be allowable for the reasons stated below.

Claim 24 recites that the spray head comprises at least one nozzle mounted to the chassis for producing an evenly-dispersed forward projecting discharge of the liquid under pressure. Neither Kildow or Fellhauer et al. disclose a spray head mounted to a front end of the chassis.

Claims 25-29 discuss the connection of the spray head and spray wand to the pump. This includes the use of a tee connected to a discharge port of the pump and a splitter having first and second valves. Neither Kildow or Fellhauer et al. discuss these

elements, thus, they would not be rendered unpatenable by the combination of these references.

Claims 31-39 depend from independent claim 30, and are thus believed to be allowable for the reasons stated below.

Additionally, claims 31 and 32 recite that the interior cavity is defined by sides that form a continuous rim on a top edge of the chassis, and that the top edge defines a female strengthening ring for adding strength to the chassis, and the container has a male strengthening ring for adding strength and mating with the female strengthening ring of the chassis. Neither Kildow or Fellhauer et al. disclose the use of a female strengthening ring or a male strengthening ring to provide added strength and to allow mating engagement.

Claim 36 recites that the spray head comprises at least one nozzle mounted to the chassis for producing an evenly-dispersed forward projecting discharge of a liquid under pressure. Neither Kildow or Fellhauer et al. disclose a spray head mounted to a front end of the chassis.

Claims 38 and 39 recite that the sprayer further includes a back cover adjacent to the container and attached to the chassis for covering the power supply and the pump within the interior cavity of the chassis, and that the back cover has a male strengthening ring for mating with the female strengthening ring of the chassis. Neither Kildow or Fellhauer et al. disclose the use of a separate cover attached to the chassis for covering the power supply and pump. Additionally, none of the references disclose a back cover

with a male strengthening ring for mating with a female strengthening ring of the chassis.

Fellhauer et al. discloses a second housing having a reservoir (i.e. container) positioned on top of a first housing, but does not disclose a cover adjacent to a container for covering the pump and battery. Likewise, Kildow discloses a container positioned over the opening in the chassis, but does not disclose a cover adjacent the container for covering the pump and battery.

Applicant submits that all of the claims in the case are now in condition for allowance. Such action is therefore respectfully requested at an early date. If the Examiner believes that any issues remain for discussion, he is invited to contact the undersigned.

The Director is hereby authorized to charge any additional fees or any underpayments which may be required for the above-referenced application to Deposit Account No. 01-0265.

Respectfully submitted,

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~~ECO-GUARDIAN~~ LAWN AND GARDEN SPRAYER

Technical Field and Background of the Invention

[0001] This application claims the benefit of Provisional Application number 60/422,698 filed on October 31, 2002.

[0002] The present invention relates to a lawn ~~mower-like~~ sprayer system designed for homeowners, landscapers, and lawn-care professionals for the application of liquid organic fertilizers and soil amendments on small to medium sized yards and business landscapes around the world.

[0003] Within the Lawn and Garden Industry there is a paradigm shift taking place away from a Nitrogen-Phosphate-Potash "NPK" focus to a more safe, non-toxic, and sustainable home/backyard ecosystem. In response to this shift, the primary source of information and development is coming from the agriculture industry where a century of chemical use by farmers has eroded the depth and quality of fertile soil worldwide. Many companies and like minded individuals have developed products for the agriculture industry intent on improving the natural biology of the soil. This has led to increased crop yields and a reduction in the need for fertilizers of all types, along with developing a deeper "living" soil base allowing for larger and deeper root growth which in turn reduces the need for valuable water resources.

[0004] Product development of organic fertilizers and amendments for the homeowner market have primarily come from agriculture which relies heavily on water soluble products delivered to the ground and plants by tractors pulling large sprayer tanks. While the small farmer and large homeowner have access to downsized tractors and sprayers, these

implements are still too large and cumbersome for most small to medium sized yards.

[0005] Currently there is no system available to fit the needs of homeowners with homesites falling in the range of 1/4 to 1/2 acres. Available implements are either too large or too small to be of practical use. On the large end there are several ~~models~~ sprayers which are designed to be pulled behind a small lawn tractor. The need to pull is an issue of size and weight. The smallest sprayer system available through regular retail channels is 15 gallons. The total weight of this system fully loaded is over 150 pounds which would prove extremely difficult to maneuver in thick turf without the aid of a tractor. ~~Located at~~ At the other end of the spectrum is the 2 gallon backpack sprayer which is ~~completely impracticable for lawn coverage~~ due to an incomplete uniform coverage provided by a backpack sprayer.

[0006] ~~The Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer according to the invention answers the general problems found in the marketplace and uniquely packages technology to build a homeowner friendly sprayer system. ~~The Eco-Guardian Lawn and Garden Sprayer combines~~ By combining the spraying capabilities for turf, tree, plant, and bed spraying into a ~~push type~~ push-type platform which that can be easily used and maintained by men and women of all ages.

Summary of the Invention

[0007] Therefore, it is an object of the invention to provide a lawn and garden sprayer for small to medium sized yards.

[0008] It is another object of the invention to provide a lawn and garden sprayer that can be pushed by men and women of all ages.

[0009] It is another object of the invention to provide a lawn and garden sprayer that can be maneuvered in thick turf without the aid of a tractor.

[0010] It is another object of the invention to provide a lawn and garden sprayer that allows for complete lawn coverage.

[0011] It is another object of the invention to provide a lawn and garden sprayer that can be used to spray directly on trees, shrubs, plants, and planting beds.

[0012] It is another object of the invention to provide a lawn and garden sprayer that can be easily maintained.

It is another object of the invention to provide a lawn and garden sprayer that utilizes an easily-maneuverable lawn mower-type chassis.

[0013] These and other objects of the present invention are achieved in the preferred embodiments disclosed below by providing a mobile lawn and garden sprayer including a ~~rigid frame chassis, wherein the chassis has a right horizontal support connected to a right end of a front horizontal support and a right end of a rear horizontal support, a left horizontal support connected to a left end of a front horizontal support and a left end of a rear horizontal support, a guide bar connected to the right support, the left support, and the rear support by at least one vertical support; mounted on~~ a plurality of rear wheels connected to a rear end of the chassis and a plurality of front wheels connected to a front end of the chassis; and having a push handle attached to the chassis for allowing a user to manually push the sprayer; a power supply, a suction/discharge device, and a container supported by the chassis; and a first and a second means for spraying a liquid substance a container carried by the chassis for containing a liquid for being sprayed; a power supply carried on the chassis for supplying power to a pump connected to the container for

discharging the liquid from the container under pressure; and at least one spray head communicating with the container for discharging the liquid under pressure.

[0014] According to another preferred embodiment of the invention, the rear wheels are substantially larger than the front wheels to allow easy movement of the sprayer.

[0015] According to another preferred embodiment of the invention, the power supply is a battery and the suction/discharge device is a pump.

[0016] According to another preferred embodiment of the invention, the suction/discharge device is connected to the container by at least one hose.

[0017] According to another preferred embodiment of the invention, the first means for spraying a liquid comprises at least one spray nozzle.

[0018] According to another preferred embodiment of the invention, the spray nozzle is attached to the front end of the chassis and connected to the suction/discharge device by at least one hose.

[0019] According to another preferred embodiment of the invention, the second means for spraying a liquid comprises at least one spray wand.

[0020] According to another preferred embodiment of the invention, the spray wand is connected to said suction/discharge device by at least one hose.

[0021] According to another preferred embodiment of the invention, a lawn and garden sprayer including a rigid uni-body chassis ~~wherein the chassis has a front side, a rear side, a right side, and a left side defining~~ having an interior cavity mounted on a plurality of wheels and having a push handle attached to the chassis for allowing a user to manually push the sprayer; an interior cavity for supporting a container, a power supply, and a suction/discharge device; a female strengthening ring defined by a top edge of the chassis;

a guide bar connected to the right side and the left side of the chassis; a plurality of rear wheels connected to a rear end of the chassis and a plurality of front wheels connected to a front end of the chassis; and a first and a second means for spraying a liquid substance a container carried within the interior cavity for containing a liquid for being sprayed; a power supply carried within the interior cavity for supplying power to a pump connected to the container for discharging the liquid from the container under pressure; and at least one spray head communicating with the container for discharging the liquid under pressure.

[0022] According to another preferred embodiment of the invention, the container has a male strengthening ring for mating with the female strengthening ring of the chassis.

[0023] According to another preferred embodiment of the invention, the power supply is a battery and the suction/discharge device is a pump.

[0024] According to another preferred embodiment of the invention, the rear wheels are substantially larger than the front wheels to allow easy movement of the sprayer.

[0025] According to another preferred embodiment of the invention, the suction/discharge device is connected to the container by at least one hose.

[0026] According to another preferred embodiment of the invention, the first means for spraying a liquid comprises at least one spray nozzle.

[0027] According to another preferred embodiment of the invention, the spray nozzle is attached to the front end of the chassis and connected to the suction/discharge device by at least one hose.

[0028] According to another preferred embodiment of the invention, the second means for spraying a liquid comprises at least one spray wand.

[0029] According to another preferred embodiment of the invention, the spray wand is

connected to the suction/discharge device by at least one hose.

[0030] According to another preferred embodiment of the invention, the lawn and garden sprayer further includes a back cover for covering the power supply and the suction/discharge device within the chassis.

[0031] According to another preferred embodiment of the invention, the back cover has a male strengthening ring for mating with the female strengthening ring of the chassis.

Brief Description of the Drawings

[0032] Some of the objects of the invention have been set forth above. Other objects and advantages of the invention will appear as the invention proceeds when taken in conjunction with the following drawings, in which:

[0033] Figure 1 is an environmental view of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer.

[0034] Figure 2 is a perspective view of a first embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer showing the sprayer from the side.

[0035] Figure 3 is a perspective view of a first embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer showing the sprayer from an angle.

[0036] Figure 4 is a perspective view of the pump, battery, and hoses of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer.

[0037] Figure 5 is a perspective view of a second embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer showing the sprayer from the side.

[0038] Figure 6A is a perspective view of a side view of a chassis of the second embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer.

[0039] Figure 6B is a perspective view of an end view of a chassis of the second embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer.

[0040] Figure 7A is a perspective view of a side view of a tank of the second embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer.

[0041] Figure 7B is a perspective view of a top view of a tank of the second embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer.

[0042] Figure 7C is a perspective view of a rear view of a tank of the second embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer.

[0043] Figure 8 is a perspective view of a tank within a chassis along with a back cover of the second embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer.

[0044] Figure 9 is a perspective view of the tank within the chassis with a back cover hinged on the chassis of the second embodiment of the ~~Eco-Guardian Lawn and Garden Sprayer~~ lawn and garden sprayer.

Description of the Preferred Embodiment and Best Mode

[0045] Referring now specifically to the drawings, a ~~Lawn and Garden Sprayer~~ mobile lawn and garden sprayer according to the first embodiment of the present invention is illustrated in Figures 1-4 and shown generally at reference numeral 10. The lawn and garden sprayer 10 is designed for use with a lawn or garden, but may also spray a liquid on other types of surfaces. The lawn and garden sprayer 10 has a ~~rigid frame chassis 11 with a right horizontal support 12 running parallel to a left horizontal support 13. The right horizontal support 12 is connected to a right end of a front horizontal support 14 and a right end of~~

a rear horizontal support 16. The left horizontal support 13 is connected to a left end of the front horizontal support 14 and a left end of the rear horizontal support 16. A guide push bar 17 12 is attached to the left horizontal support 13 and the right horizontal support 14 by two vertical supports 18 and 19 at the rear end of the rigid frame chassis 11. The rigid frame chassis 11 is supported by two a pair of spaced-apart rear wheels 20 13 and 24 14 connected to a rear end of the rigid frame chassis 11 and two a pair of spaced-apart front wheels 22 16 and 23 17 connected to a front end of the rigid frame chassis 11. The rear wheels 20 13 and 24 14 are substantially bigger a larger diameter than the front wheels 22 16 and 23 17 to allow easy movement of the lawn and garden sprayer 10 through thick turf. The front wheels 22 16 and 23 17 are rigidly fixed to the rigid frame chassis 11, however, other types of front wheels such as caster wheels can be used. The rigid frame chassis supports a container 24 18, a suction/discharge device 26 (hereinafter referred to as a pump) pump 19, and a power supply 27 20 (hereinafter referred to as a battery). The container 24 18 contains a liquid for being sprayed under pressure, such as a water soluble fertilizer and preferably has a capacity of 8 gallons preferably has an 8 gallon capacity, but any suitably sized container could be used. The container 24 18 is easily removed from the chassis 11 for cleaning, substantially increasing the life of all components associated with the pump 26 19. The pump 26 19 is a diaphragm pump such as the 8000 Series Diaphragm Pump sold by SHURflo Pump Manufacturing Company, however, any suitable pump may be used. The battery 27 20 is a 12 volt battery such as the PS-12280 sold by Power Sonic, however, any suitable power supply may be used.

[0046] Referring specifically to Figure 4, a suction hose 28 21 is connected to the suction port 29 22 of the pump 26 19 and runs to the container 24 connects the pump 19 to the

container 18 to allow the pump 26 19 to ~~remove the water soluble fertilizer, or any other~~
~~type of discharge~~ liquid, within from the container 24 18 under pressure. A tee 30 23 is
connected to the discharge port 34 24 of the pump 26 19 for allowing the ~~water soluble~~
~~fertilizer liquid~~ to flow to a wand 32 26 or to a pair of nozzles 33 27 and 34 28. A pressure
gage 36 29 is connected to the tee 30 23 to allow a user to check the output pressure of
the pump 26 19 to verify the pump 26 19 is working properly. A flexible wand hose 37 30
is connected at the end of the tee 30 23 and runs to a the wand 32 26 for spraying trees,
shrubs, and flowers. The wand hose 37 30 is preferably twenty feet in length, however,
any suitable length ~~could~~ could be used. A nozzle hose 38 31 runs from the center of the
tee 30 23 to a splitter 39 32. The splitter 39 32 splits the flow of ~~water soluble fertilizer~~
liquid to the two nozzles 33 27 and 34 28. The splitter 39 32 contains shut off valves 40
33 and 44 34 to control the flow of ~~water soluble fertilizer liquid~~ to each of the nozzles 33
27 and 34 28. The nozzles 33 27 and 34 28 are mounted to the front of the ~~rigid frame~~
chassis 11. The nozzles 33 27 and 34 28 are mounted to a plate 42 36 which is attached
to the ~~rigid frame~~ chassis 11 by a pair of outwardly extending arms 43 37 and 44 38 (See
Figures 1-3). The nozzles 33 27 and 34 28 are preferably mounted to provide a an
outwardly projecting 24 inch overlapping spray, however, other nozzle spacing could be
used to provide a larger or smaller overlapping spray. The flow of ~~water soluble fertilizer~~
liquid to the nozzles 33 27 and 34 28 and the wand 32 26 is controlled by back pressure
produced by the closing of valves. When the wand 32 26 is not in use, it produces a back
pressure forcing the ~~water soluble fertilizer liquid~~ to flow towards the nozzles 33 27 and 34
28. The amount of ~~water soluble fertilizer liquid~~ flowing to the nozzles 33 27 and 34 28 is
controlled by the shut off valves 40 33 and 44 34. To use the wand 32 26, the shut off

valves ~~40~~ 33 and ~~44~~ 34 are completely shut off creating a back pressure and forcing the water-soluble-fertilizer-liquid to flow towards the wand ~~32~~ 26.

[0047] Referring now to Figures 5-9, Figures 5-9 illustrate a ~~Lawn and Garden Sprayer~~ mobile lawn and garden sprayer according to a second embodiment of the invention and is shown generally at reference numeral ~~50~~ 40. The ~~Lawn and Garden Sprayer~~ mobile lawn and garden sprayer ~~50~~ 40 illustrated in Figures 5-9 performs and operates in the same manner as the ~~Lawn and Garden Sprayer~~ lawn and garden sprayer 10 illustrated in Figures 1-4. However, the ~~Lawn and Garden Sprayer~~ lawn and garden sprayer ~~50~~ 40 is a sleeker, lighter weight, and more compact design.

[0048] Referring specifically to Figure 5, ~~Figure 5 is an overall side view of the Lawn and Garden Sprayer 50.~~ The ~~Lawn and Garden Sprayer~~ the lawn and garden sprayer ~~50~~ 40 includes a rigid uni-body chassis ~~51~~ 41 which supports a container ~~52~~ 42, a suction/discharge device ~~53 (hereinafter referred to as a pump)~~ pump ~~43~~, and a power supply ~~54~~ 44 (hereinafter referred to as a battery). The ~~rigid uni-body chassis~~ rigid uni-body chassis ~~51~~ 41 is supported by ~~two~~ a pair of spaced-apart rear wheels ~~56~~ 46 and ~~57~~ 47 mounted to a rear ~~end~~ end of the ~~rigid uni-body chassis~~ rigid uni-body chassis ~~51~~ 41 and ~~two~~ a pair of spaced-apart front wheels ~~58~~ 48 and ~~59~~ 49 mounted to a front of the ~~rigid uni-body chassis~~ rigid uni-body chassis ~~51~~ 41. The rear wheels ~~56~~ 46 and ~~57~~ 47 are substantially larger have a larger diameter than the front wheels ~~58~~ 48 and ~~59~~ 49 to allow easy movement in thick turf. The front wheels ~~58~~ 48 and ~~59~~ 49 are rigidly fixed to the ~~rigid uni-body chassis~~ rigid uni-body chassis ~~51~~ 41, however, other types of front wheels such as caster wheels can be used. A guide push bar ~~60~~ 50 is attached to the ~~rigid uni-body chassis~~ rigid uni-body chassis ~~51~~ 41 to allow easy movement of the ~~Lawn and Garden Sprayer~~ lawn and garden sprayer ~~50~~ 40. A spray head such as ~~Nozzles 61 and 62~~ nozzles ~~51 and 52~~ are

mounted to the front end of the ~~rigid uni-body chassis 54~~ 41 providing an outwardly projecting 24 inch overlapping spray, and a wand ~~63~~ 53 is mounted to the ~~guide bar 60~~ push bar 50 for spraying trees, shrubs, and flowers.

[0049] Referring specifically to Figures 6A and 6B, the ~~rigid uni-body chassis 54~~ 41 has a front side ~~64~~, a rear side ~~66~~, a left side ~~67~~, a right side ~~68~~, and a top edge ~~69~~ defining an interior cavity ~~70~~ 54 defined by sides of the chassis 41 that form a continuous rim 56 along a top edge 57 of the chassis 41 for supporting a the container 52 42, a suction/discharge device 53 the pump 43, and a the power supply 54 battery 44. A female strengthening ring ~~74~~ 58 is formed in the top edge ~~69~~ 57 for mating with a male strengthening ring adding strength to the chassis 41.

[0050] Referring specifically to Figures 7A, 7B, and 7C, the container ~~52~~ 42 has a fill cap ~~72~~ 59 for filling the container ~~52~~ 42 with a liquid such as a water soluble fertilizer, located on the top of the container ~~52~~ 42. The top half ~~73~~ 60 of the container ~~52~~ 42 is larger than the bottom half ~~74~~ 61 of the container ~~52~~ 42, permitting the bottom half ~~74~~ 61 to fit within the interior cavity ~~70~~ 54 of the ~~rigid uni-body chassis 54~~ 41 and providing a ledge ~~62~~ with a male strengthening ring ~~76~~ 63 for adding strength to the container 42 and mating with the female strengthening ring 74 58 of the rigid uni-body chassis 54 41. On the rear end of the container ~~52~~ 42 located on the top half ~~73~~ 60 a ledge ~~77~~ 64 is formed, for providing an area where a back cover ~~66~~ can rest. The ledge ~~77~~ 64 runs from the male strengthening ring ~~76~~ 63 located at the bottom of the top half ~~73~~ 60 of the container ~~52~~ 42 up a left side ~~78~~ 67 of the top half ~~73~~ 60 across the top of the top half ~~73~~ 60 and down a right side ~~79~~ 68 of the top half ~~73~~ 60 to the male strengthening ring ~~76~~ 63.

[0051] Referring specifically to Figures 8 and 9, the container ~~52~~ 42 nests within the rigid

uni-body chassis 51 41. The male strengthening ring 76 63 of the container 52 42 mates with the female strengthening ring 74 58 of the ~~rigid uni-body~~ chassis 51 41 providing a precise fit. A back cover 80 66 is used to cover the pump compartment 84 69 and the battery compartment 82 70. The back cover 80 66 has a male strengthening ring 83 71 along a bottom edge 84 72 of the back cover 80 66. The male strengthening ring 83 71 mates with the female strengthening ring 74 58 of the ~~rigid uni-body~~ chassis 51 41 providing a precise fit. The back cover 80 66 also matches up with the ledge 76 64 along the rear end of the container 52 42 providing a flush and uniform fit. The back cover 80 66 is attached to the ~~rigid uni-body~~ chassis 51 41 by a hinged connection 86 72 allowing easy access to the pump 53 43 and battery 54 44.

[0052] A lawn and garden sprayer has been described above. Various details of the invention may be changed without departing from its scope. Furthermore, the foregoing description of the preferred embodiment of the invention and the best mode of practicing the invention are provided for the purpose of illustration only and not for the purpose of limitation—the invention being defined by the claims.